

REMARKS

This is intended as a full and complete response to the Office Action dated August 21, 2008, having a shortened statutory period for response extended three months set to expire on February 21, 2009. Please reconsider the claims pending in the application for reasons discussed below.

Claim Rejections - 35 U.S.C. § 103

The Examiner rejected claims 1-15, 17-28, 30-34 and 38 under 35 U.S.C. § 103(a) as being unpatentable over Henning (US 5,609,178) and McDonald (U.S. 4,936,397). Applicant respectfully traverses the rejection.

As admitted by the Examiner, Henning fails to disclose a variable flow restriction in the bore responsive to flow from the surface towards the distal end of the string through the tubing, the degree of restriction tending to decrease as flow across the restriction increases. Further, as admitted by the Examiner, Henning fails to disclose a variable flow restriction adapted to control fluid flow through the body bore below the ports to establish a pressure differential to activate the valve. As such, the Examiner appears to rely on McDonald to teach these limitations. However, McDonald also fails to teach these limitations. Moreover, it would not have been obvious to one of ordinary skill in the art at the time the invention was made to place the flow restriction of McDonald above or below the valve of Henning.

McDonald merely discloses a control valve 20 that is intended for a very specific purpose, in particular for use with a pneumatic motor operated earth drilling tool. For instance, McDonald states that the "control valve of the present invention is installed upstream of the tool motor, and generally adjacent thereto, in the drill string and allows the pressure to build~up before reaching the rotor/stator section. At a predetermined pressure, the valve opens and allows air at operating pressure to immediately blast the rotor/stator section. This prevents the pressure from equalizing across the rotor/stator and allows the tool to start." (see McDonald, col. 7, lines 44-51) As such, it is apparent that the control valve 20 set forth in McDonald operates in only two modes, either closed or fully opened. The valve 20 of McDonald is designed such that it requires a

relatively large opening pressure but requires a lower pressure to remain open. For example, McDonald states that the "dual seal design, i.e. upper and lower seals 49 and 38, requires a relatively large opening pressure but, due to a seal area increase, requires a lower pressure to remain open." (see McDonald, col. 8, lines 4-21) McDonald also states that the "valve is also designed to minimize pressure drop and reductions in flow rate. This is accomplished by taking the pressure drop that opens the valve across the valve seat, while taking the pressure drop that holds the valve open from the bore of the valve to the hole annulus, instead of across the seal seat. This not only maintains working pressure for the tool, but also maintains the flow rate and allows the valve to remain open with a minimum of pressure drop." (see McDonald, col. 8, lines 22-34)

As such, it is apparent that it is the aim of McDonald to provide a valve that, once opened, is non-responsive to flow from surface towards the distal end of the string through the tubing. (see McDonald, col. 8, lines 15-20) Furthermore, the valve of McDonald is designed such that the degree of restriction does not tend to decrease as flow across the restriction increases. As noted above, the valve of McDonald is designed to open at a predetermined pressure, and then remain fully open even if the flow/pressure across the valve decreases. Furthermore, an increase in flow across the open valve has no effect on the degree of restriction provided by the valve. As noted above, on opening the valve immediately assumes the fully open position, such that any increase in flow across the valve has no effect on the valve configuration. Therefore, the combination of Henning and McDonald does not provide all of the features of claims 1, 22, 32 and 38, as McDonald does not disclose a variable flow restriction within a tubular that is responsive to flow from surface towards the distal end of the string through the tubing, the degree of restriction tending to decrease as flow across the restriction increases

Additionally, the valve of McDonald is designed for use with a pneumatic motor operation earth drilling tool, and the configuration of the valve is specific to this use. Accordingly, it would not have been obvious to one of ordinary skill in the art at the time in the invention was made to place the valve of McDonald above or below the valve of Henning, which is solely intended for use with liquid as the operation fluid (see, for

example, Henning col. 2, lines 37- 41), where it states that "the bypass may be opened by increasing and then reducing the hydrostatic pressure of the fluid." Therefore, it would not have been obvious to one of skill in the art at the time the invention was made to combine the teachings of McDonald and Henning as the valve of McDonald is specifically designed for use with air as the working fluid, whereas the valve of Henning et al is specifically designed for use with a liquid as the working fluid.

As the foregoing illustrates, the combination of Henning and McDonald fails to render the claims obvious. Therefore, Applicants respectfully request the 103(a) rejection be removed and allowance of the same.

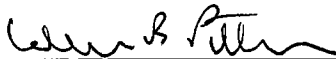
Allowable Subject Matter

The Examiner objected to claims 16, 29 and 35 as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. Claims 16, 29 and 35 depend from claims 1, 22, and 32, respectively, and therefore are allowable for at least the same reasons as claims 1, 22, and 32.

Conclusion

Having addressed all issues set out in the office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully requests that the claims be allowed.

Respectfully submitted,



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